

New Exotic Crane-Flies (Tipulidae: Diptera). Part II

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The preceding part under this general title was published in ENTOMOLOGICAL NEWS, 71: 15-20; 1960. The species discussed herewith are from south and central India where they were taken by the veteran entomologist, Mr. P. Susai Nathan, of Kurumbagaram, to whom I am indebted for many interesting crane-flies. The types of the species are preserved in my personal collection of these flies.

Lechria coorgensis new species

Size small; general coloration of pronotum and mesonotum orange, posterior sclerites darker, pleura dull orange; wings weakly tinged with brown, prearcular and costal fields more yellowed; tip of R_{1+2} atrophied, R_2 before the radial fork, cell $1st M_2$ long, $m-cu$ at or before the fork of M ; abdomen of male black, hypopygium dull orange.

♂. Length about 5 mm.; wing 5.7 mm.; antenna about 1.1 mm.

♀. Length about 6.5 mm.; wing 5.3 mm.

Rostrum light yellow; palpi brownish black. Antennae black, scape more pruinose; flagellar segments oval, a little longer than their verticils. Head dark gray, with long proclinate black bristles; anterior vertex in both sexes reduced to a capillary line that is narrower than a single row of ommatidia, provided with a series of bristles.

Pronotal scutum orange, more yellowed laterally, scutellum yellow. Mesonotum uniformly dull brownish orange, the sides a little more yellowed; scutum brownish orange, the centers of the lobes infuscated; scutellum and mediotergite brown. Pleura dull orange. Halteres with stem weakly darkened, knob dark brown. Legs with the coxae and trochanters orange; femora brownish yellow, tibiae darker, tarsi passing into black.

¹Contribution from the Entomological Laboratory, University of Massachusetts.

Wings weakly tinged with brown, prearcular and costal fields more yellowed; veins brown, more yellowed in the brightened fields. Longitudinal veins with abundant trichia extending basad virtually to the level of the arculus, lacking on the basal section of Cu_1 and the anal veins. Venation: Free tip of Sc_2 present but faint, R_{1+2} atrophied; R_2 subequal to R_{3+4} ; $r-m$ at near three-fourths Rs and at midlength of cell 1st M_2 , the latter very long; $m-cu$ at or some distance before the fork of M ; cell 2nd A relatively broad.

Abdomen of male black, hypopygium dull orange; in the female, abdomen dark brown, the outer segments and basal sternites more yellowed.

Habitat. SOUTH INDIA. *Holotype:* ♂, Ammatti, South Coorg, 3,100 feet, May 1951 (Susai Nathan). *Allotopotype:* ♀.

The venation of the radial field of the wing is most nearly as in *Lechria nehrwana* Alexander, of Assam, but there is no close resemblance to the present fly in any other regard.

Protohelius nilgiricus new species

General coloration of thorax brownish yellow, with large and conspicuous blackened areas on sides of praescutum, scutal lobes and pleurotergite; legs yellow; wings subhyaline, stigma short-oval, dark brown.

♂. Length about 6 mm.; wing 6.5 mm.; antenna about 1.8 mm.

♀. Length about 8 mm.; wing 7 mm.

Head testaceous yellow; palpi dark brown. Antennae 16-segmented; scape obscure yellow, pedicel brown, flagellum yellowish brown, darker outwardly; flagellar segments long-oval, subequal in length to the verticils; terminal segment less than one-half the penultimate. Anterior vertex narrow, especially in the male, approximately one-third the diameter of the scape, in female slightly broader than the scape.

Pronotum infuscated medially, paler on sides. Mesonotum brownish yellow, conspicuously patterned with three major black areas on either side, the largest laterally on the praescutum before the suture, the second occupying most of the dorsal pleu-

rotergite, third area occupying all but the posterior lateral part of each scutal lobe; less evident darkenings on scutellum and posterior part of mediotergite. Pleura reddish yellow. Halteres with stem brownish yellow, knob blackened. Legs with all coxae and trochanters reddish yellow; remainder of legs yellow, outer tarsal segments a trifle darker; claws smooth. Wings subhyaline; stigma short-oval, dark brown; veins light brown. Veins beyond cord with macrotrichia; basad of cord with a sparse series on outer two-thirds of R_s and a few at tip of 2nd A (in type only). Venation: Sc very long, as in the genus; free tip of Sc_2 its own length or less beyond tip of Sc_1 ; R_{1+2} shorter than R_2 ; $m-cu$ close to fork of M .

Abdominal tergites light brown, sternite and hypopygium yellow. Ovipositor with the valves very long; cerci slender, straight, tips upcurved, hypovalvae a little stouter, straight. Male hypopygium with the outer dististyle blackened except at base, the termination elongate, more than three times the lateral lobe; inner style a little longer, pale, the terminal portion about twice its lower lobe, the latter with conspicuous setae.

Habitat. SOUTH INDIA. *Holotype:* ♂, Cherangode, Nilgiri Hills, Madras, 3,500 feet, November 1950 (Susai Nathan). *Allotopotype:* ♀, October 1950.

The genus *Protohelius* is new to the Indian fauna, the three Asiatic species hitherto described being from Formosa and eastern China; in addition two species are known from South America. The present fly is quite distinct from all of the above in the coloration of the body.

Hexatoma (Eriocera) glomerosa new species

Size medium (wing of female 15 mm.); antennae of female 11-segmented; general coloration of thorax light gray, praescutum with four conspicuous dark brown stripes; dorso-pleural membrane of thorax with a conspicuous blackened area; femora and tibiae obscure yellow, tips very narrowly blackened; wings tinged with brown, cell C and the small stigma darker; veins of outer radial field stout; R_{2+3} short, about one-half

R_{1+2} ; abdomen light brown, extreme posterior borders of tergites blackened; ovipositor with long very slender cerci.

♀. Length about 16 mm.; wing 15 mm.; antenna about 2.8 mm.

Rostrum short, buffy yellow; first segment of palpus brown, remaining segments black. Antennae 11-segmented; scape and pedicel yellow, first flagellar segment brownish yellow, outer segments black; first flagellar segment stout, exceeding the combined second and third, lower surface with long delicate subappressed setae, upper surface with fewer erect stouter bristles; outer segments gradually decreasing in size, the terminal one smallest. Head dull buffy yellow, the large entire subglobular vertical tubercle more polished brownish yellow.

Pronotum light brown. Mesonotal praescutum light gray, with four conspicuous dark brown stripes, the intermediate pair bordered by paler brown, including the median interspace; setae abundant, pale; posterior sclerites of notum light gray, scutal lobes darker; scutellum yellowish gray, central part narrowly darker; mediotergite chestnut brown, more pruinose on sides, pleurotergite gray. Pleura gray, metapleura more yellowed; small black spots on the ventral anepisternum, with a larger and more conspicuous one on the dorsopleural membrane. Halteres brownish yellow, knob black. Legs with coxae brownish yellow, fore pair darker anteriorly; trochanters brownish yellow; femora and tibiae obscure yellow, tips very narrowly but evidently blackened; proximal tarsal segments brownish yellow, tips darker, outer three segments black. Wings tinged with brown, the small stigma and broad cell *C* darker brown; veins, especially of the radial field, stout, narrowly bordered by darker, *M* and *Cu* less evidently suffused; veins of cord, *Rs* and outer radial field blackened, the outer medial veins a little paler; veins in the prearcular and costal regions brownish yellow. Outer veins, with the exception of R_5 , glabrous. Venation: Sc_1 ending beyond the level of *r-m*, Sc_2 shortly removed; R_{2+3+4} long, subequal to R_3 ; R_{2+3} short, about one-half R_{1+2} ; cell 1st M_2 subequal in length to the distal section of vein M_3 ; *m-cu* about one-third to one-fourth its length beyond the fork of *M*.

Abdomen light brown, the extreme posterior borders of the tergites blackened; basal sternites more yellowed. Ovipositor with the cerci elongate, very slender, blackened, the bases and tips yellowed.

Habitat. SOUTH INDIA. *Holotype:* ♀, Kollar, Nilgiri Hills, Madras, 1,250 feet, November 1958 (Susai Nathan).

Despite its thoracic pattern, *Hexatoma (Eriocera) glomerosa* seems to be allied to members of the *verticalis* group of the subgenus, all other regional members having the thorax more uniformly blackened or infuscated.

Hexatoma (Eriocera) terebrella new species

Size small (wing of female 8 mm. or less); antennae of female 6-segmented; general coloration of mesonotal praescutum gray, with four inconspicuous brown stripes, together with a capillary darkened median vitta; legs light brown; wings weakly tinged with brown, stigma pale brown, inconspicuous; Sc_1 long; R_{2+3} longer than R_2 ; abdomen brownish black; ovipositor with valves short and fleshy, especially the oval cerci.

♀. Length about 7–7.5 mm.; wing 7.5–8 mm.; antenna about 1.1–1.3 mm.

Rostrum very reduced, buffy; palpi short, brown, outer segments darker. Antennae of female 6-segmented, very short, brown throughout; first flagellar segment nearly as long as the succeeding two combined and stouter; terminal segment about two-thirds the penultimate; vestiture of flagellum relatively short and sparse, pale. Head brownish gray, with short pale setae; vertical tubercle large and rounded.

Pronotum brownish gray. Mesonotal praescutum gray, with four inconspicuous brown stripes, the intermediate pair divided by a narrow pale ground line that again is split by a capillary darkened median vitta that is continued vaguely back to the suture; praescutal vestiture very short and pale; posterior sclerites of notum dark gray, the scutal lobes patterned with brown. Pleura dark brown, sparsely gray pruinose; dorso-pleural membrane brown. Halteres with stem dusky, knob darkened. Legs with coxae light brown; trochanters brownish

yellow; remainder of legs light brown. Wings weakly tinged with brown, stigma very pale brown, inconspicuous; veins brown, more brownish yellow in the costal and prearcular fields. Veins unusually glabrous, beyond the cord including a very scattered series of small trichia over the entire length of the distal section of vein R_5 . Venation: Sc_1 ending just beyond level of the fork of R_s , Sc_2 far removed, before the level of the fork of R_s , Sc_1 alone nearly as long as or longer than $m-cu$; R_2 and R_{1+2} subequal or the latter longer, both shorter than R_{2+3} ; cell 1st M_2 rectangular; $m-cu$ beyond the fork of M .

Abdomen dark brown to brownish black. Ovipositor with the valves short and fleshy; cerci oval, provided with long pale setae; hypovalvae longer, scooplike.

Habitat. CENTRAL EAST INDIA. *Holotype:* ♀, Jeypore (Jaipur), Orissa, 1,775 feet, September 1958 (Susai Nathan). *Paratopotype:* ♀.

Hexatoma (Eriocera) terebrella most resembles *H. (E.) serendib* Alexander, of Ceylon, of which the female sex still is unknown. The two flies differ in coloration and in the venation, particularly of the subcostal and radial fields.

Hexatoma (Eriocera) terebrina new species

Size small (wing of female 8 mm.); antennae of female 9-segmented; general coloration of thorax grayish brown, praescutum with three darker brown stripes, posterior sclerites of notum more pruinose; femora yellow, tips narrowly black; wings tinged with brown, the small stigma darker brown; veins unusually glabrous; abdominal tergites bicolored, obscure yellow, the incisures dark brown; ovipositor with the cerci very long and slender.

♀. Length about 10–10.5 mm.; wing 8–8.5 mm.; antenna about 2 mm.; ovipositor to apex of the shield about 2 mm.

Rostrum very short, buffy; palpi and mouthparts black. Antennae short, 9-segmented; scape and pedicel yellowish brown, flagellum black; first flagellar segment stouter, especially basally, a little shorter than the succeeding two segments combined; segments with appressed setae. Head brown, vertex behind more

pollinose; vertical tubercle swollen, vaguely depressed medially in front.

Pronotum brown, the scutellum a little paler. Mesonotum grayish brown, the praescutum with three darker brown stripes; posterior sclerites more pruinose. Pleura brown, the anepisternum conspicuously blackened, dorsal sternopleurite paler. Halteres with stem dusky, knob dark brown. Legs with the coxae dark brown, middle pair more yellowed; fore coxae with long white setae on anterior face, those of the remaining coxae much shorter; trochanters brownish yellow; femora yellow, tips narrowly but conspicuously blackened, the amount subequal on all legs, on fore femur including about the outer twentieth of the segment; tibiae yellowish brown; tarsi dark brown to brownish black. Wings tinged with brown, the prearcular and costal fields slightly more yellowed; stigma very small, darker brown; veins brown, those in the brightened fields a little more yellowed. Veins unusually glabrous, beyond the cord and excepting *Sc* with a scattered series of small trichia on distal section of R_5 . Venation: Outer medial branches delicate and faint, as compared with those of the outer radial field; Sc_1 ending shortly beyond the level of $r-m$; R_{1+2} about twice R_2 ; R_{2+3+4} and R_3 subequal; a short spur extending into cell R near the junction of veins $r-m$ and M_{1+2} ; cell *Ist* M_2 rectangular, subequal in length to the distal section of M_3 ; $m-cu$ close to the fork of M .

Abdominal tergites bicolored, obscure yellow, the incisures dark brown, more extensive on the basal rings, proximal segments more uniformly darkened; sternites extensively darkened, with obscure yellow lateral areas. Ovipositor very long, especially the straight slender cerci; genital shield dull orange.

Habitat. CENTRAL EAST INDIA. *Holotype:* ♀, Jeypore (Jaipur), Orissa, 1,775 feet, September 1958 (Susai Nathan).

Paratopotype: ♀.

Hexatoma (Eriocera) terebrina is most similar to species such as *H. (E.) caliginosa* (Brunetti) and *H. (E.) terebrella* new species, differing evidently in the coloration of the body and legs, and in the very long cerci.